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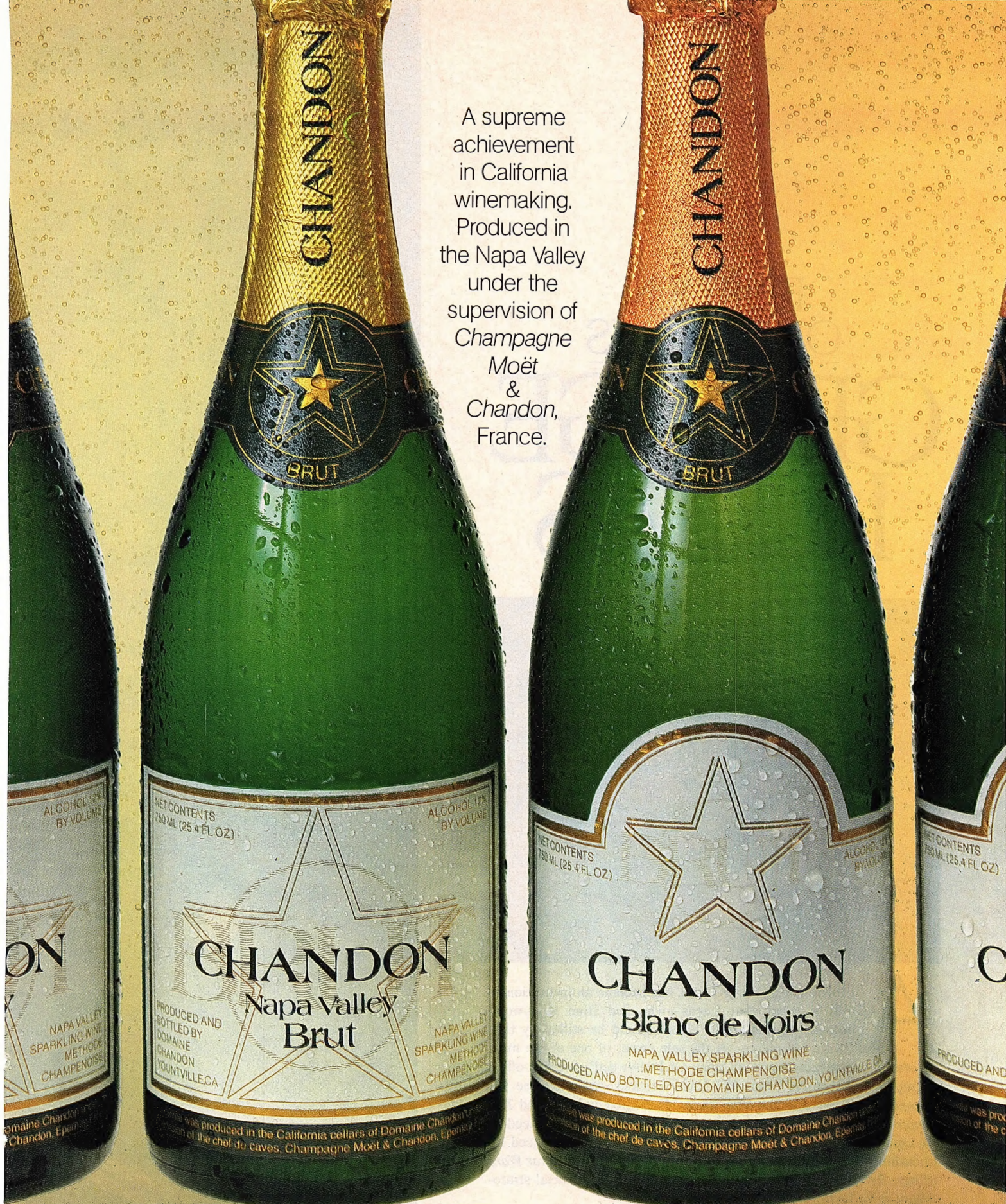
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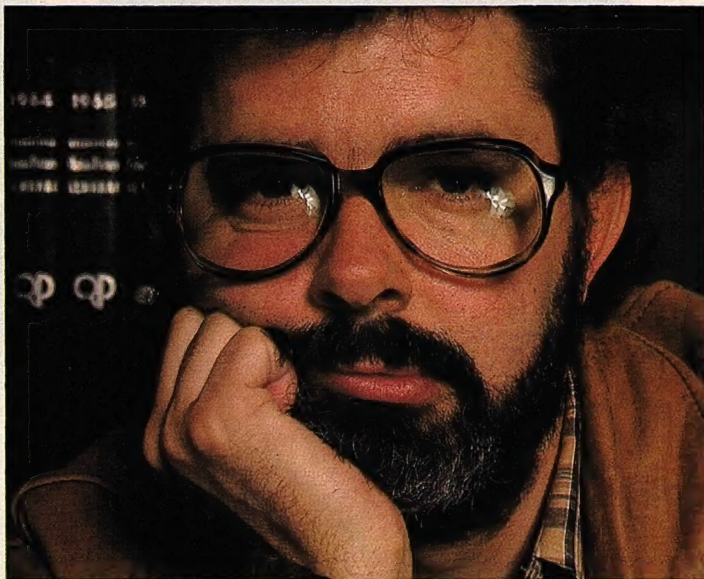
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# ART OF THE STATE



# BURDEN OF DREAMS GEORGE LUCAS

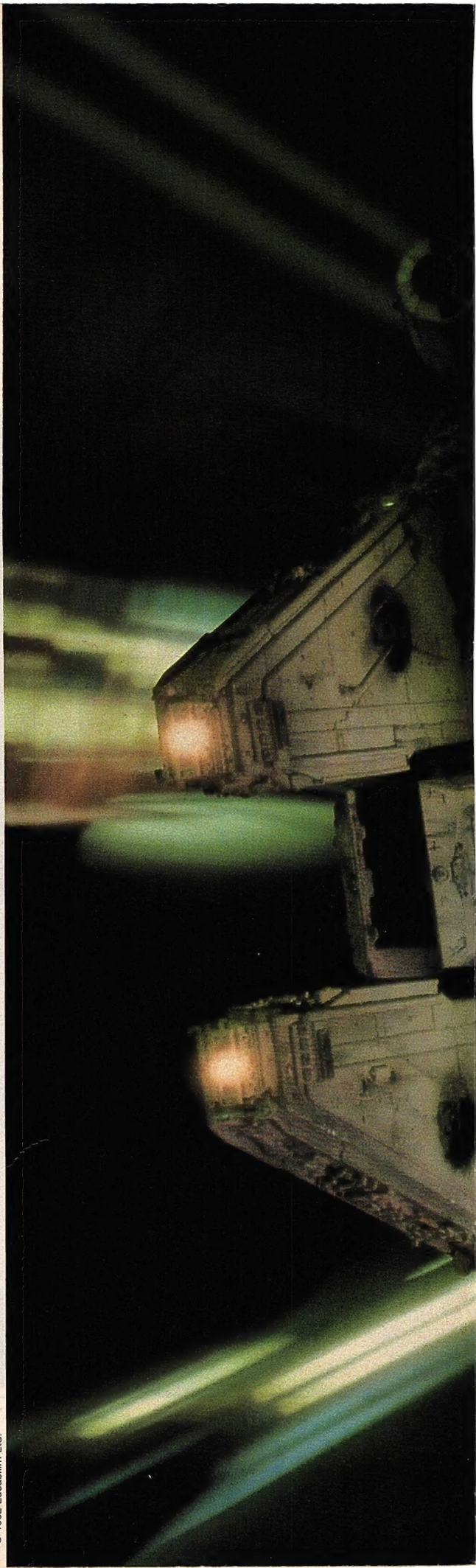
Aljean Harmetz



Bonnie Schillman/Liaison

**A**t thirty-nine, George Lucas has become an institution. It is ironic that Lucas—who fled from Hollywood because he was afraid his art would be stifled by that town's commerce—is the sole owner of one of the most successful movie factories of all time. Of Hollywood's five box-office champions between 1903 and 1983, Lucas has had a share in three. He created, wrote, and directed *Star Wars*. He created and financed *The Empire Strikes Back*, and his company, Lucasfilm Ltd., produced it. He created the story for *Raiders of the Lost Ark*, also produced by Lucasfilm. It is almost inevitable that the third movie in his *Star Wars* trilogy, *Return of the Jedi*, will climb into the same financial stratosphere as its lucrative predecessors.

*The Millennium Falcon, escorted by Rebel fighters, leads a chase deep inside the Death Star.*











*An Imperial Walker blasts the Rebels as they battle Imperial Stormtroopers outside the bunker on Endor.*

But a list of Lucas's successful movies—which would also include *American Graffiti*, currently among the top twenty-five box-office winners—comes nowhere near suggesting his impact on the movie industry. Physically and financially, he is almost completely independent of Hollywood. *Forbes* magazine has estimated his personal fortune at \$50 million and his net worth, including Lucasfilm, at more than \$100 million. Lucas must still use the major studios' distribution apparatus to get his films into American theaters, but he can demand his own terms.

Beyond Lucas's personal independence, he is creating and building tools—computer graphics, computer-assisted editing, digital sound—that will revolutionize the way movies are put together. A sprawl of converted warehouses in San Rafael, California, houses his six-year-old special ef-

fects company, Industrial Light and Magic, as well as his two-year-old research and development company, Sprocket Systems. Because it is a research company, Sprocket Systems has been losing \$200,000 a year, but a recent deal by which Sprocket agreed to create and design video games for Atari should nudge the company into the black. Founded to do the effects for *Star Wars*, Industrial Light and Magic is now the premier special effects firm in the movie industry. *Star Trek II: The Wrath of Khan*, *Poltergeist*, and *E.T.* used ILM. So did *Raiders* and *Dragonlayer*.

Lucas is one of the three most visible members of the film-

school generation that began infiltrating Hollywood in the sixties. "Once we got our foot in the door, we took over," he says, and it's only a slight exaggeration, although—except for Lucas, Steven Spielberg, and Francis Ford Coppola—they have not

*Director Richard Marquand, left, executive producer George Lucas, and costume designer Nilo Rodis-Jamero.*



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"The company was created to serve me,  
but it's turned out the opposite.  
I serve it. . . . I've said, 'I'm not going to make  
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to carry this company on my back any more.'"

cracked its higher echelons of power.

Hollywood was very different from what they thought it would be. "From my point of view, the film industry died in 1965," Lucas says. "It's taken this long for people to realize the body is cold. The day I won my six-month internship and walked onto the Warner Bros. lot was the day Jack Warner left and the studio was taken over by Seven Arts. I walked through the empty lot and thought, This is the end. The industry had been taken over by people who knew how to make deals and operate offices, but had no idea how to make movies. When the six months was over, I never went back."

Sitting in an unpretentious office adjacent to Industrial Light and Magic—which has been headquartered in San Rafael, four hundred miles north of Hollywood, for nearly five years—Lucas points south. "Down there, for every honest, true filmmaker trying to get his film off the ground, there are a hundred sleazy used-car dealers trying to con you out of your money. Going down there is like visiting a foreign country."

The creator of quintessentially Hollywood entertainments is a country boy from California's hot inland valley. Although he is still a shy person, enveloped in a privacy as tangible as brown wrapping paper, he has none of the rumpled, untidy look he had six years ago. With commercial success, Lucas has trimmed his graying beard and cut his hair. But the small-town California childhood that he put on the screen with loving care in *American Graffiti* still lingers in the rural twang of his voice—and in his choice of clothes. The green polyester pullovers, the blue-and-red checked shirts, the western shirts with pearl buttons, all seem fresh off the rack at K-Mart. He has always been painfully ill at ease among the deal makers in three-piece suits or designer blue jeans who muscle their way to success bearing "hot properties" and neatly wrapped packages of directors and stars.

Unlike the cosmopolitan Coppola, who has a gambler's passion for risks, Lucas is a cautious and frugal man. His personal life

is austere and almost reclusive. "Francis accuses me of not knowing how to spend money," he says. "Francis is right." But frugality should not be confused with stinginess. Lucas has generously given "points" (percentages) of his movies' profits to key employees and has donated \$5.7 million to his alma mater, the University of Southern California film school.

Coppola's creativity is unleashed by the threat of losing everything. But, says Lucas's wife of thirteen years, Marcia, "George is methodical and ritualistic. He loves to feel safe and secure. Any kind of threat would make him so uneasy and uncomfortable he couldn't work." Although he loves to play games, Lucas is too cautious even to play Monopoly well. The word most often used to describe him is "serious." "Even when he's silly," says Marcia, who won an Academy Award as one of the editors of *Star Wars*, "nothing is simply a fun moment. Everything gets logged." He has described himself as "not especially bright and not especially lucky," and credits his success simply to his diligence. It's no accident that his favorite fairy tale is "The Ant and the Grasshopper."

Until *The Empire Strikes Back*, George Lucas lived in northern California, but had to take the 9:00 A.M. Monday morning PSA flight south to make deals and do the postproduction work on his films. No longer. "The deal makers will come up here for George," says Michael Ritchie, another of the cluster of directors who live in northern California. "The rest of us still pay homage at the court of money."

With *Empire*, Lucas was at last able to cut the fraying ropes that bound him to Hollywood. In the summer of 1981, the last unit of Lucasfilm, the sales and marketing division, moved from its offices across the street from Universal Studios to San Rafael. Lucas had begun shedding his Hollywood clothing a year earlier. After quietly resigning from the Academy of Motion

Picture Arts and Sciences, which had nominated him as Best Writer and Best Director for both *American Graffiti* and *Star Wars*, he tore up his membership cards to the Writers Guild and Directors Guild in the spring of 1981.

But then, he neither needs nor wants to write or direct his movies. (*Empire* was directed by Irvin Kershner and *Jedi* by Richard Marquand.) "I dislike directing," Lucas says passionately. "I hate the constant dealing with volatile personalities. Directing is emotional frustration, anger, and tremendously hard work—seven days a week, twelve to sixteen hours a day. For years my wife would ask why we couldn't go out to dinner like other people. But I couldn't turn it off. Eventually, I realized that directing wasn't healthy for me." The passion dissipates. He says simply, "I don't have to work for a living any more."

Together, *Star Wars* and *The Empire Strikes Back* have sold nearly \$900 million worth of tickets. *Empire*, which cost \$25 million, was completely financed from the profits of *Star Wars*. The \$32.5 million *Return of the Jedi* was financed out of the \$92 million in *Empire* ticket sales received by Lucasfilm. The company has earned another fortune from its share of the \$1.5 billion in retail sales of products based on the two films' characters and artifacts. And the games and toys will continue to stock three or four shelves in every neighborhood toy store for years.

It would be a mistake to sneer at Lucas or accuse him of hypocrisy for railing at Hollywood's sleaziness while his own movies are spectacularly commercial. He is simply one of the lucky ones—like Alfred Hitchcock, Preston Sturges, and David Lean—whose vision, however lightweight, coincides with the inner needs and unspoken desires of his customers.

Lucas's first commercial movie, *THX 1138*, was not very commercial. Produced in 1971 by Francis Ford Coppola for \$750,000 and filmed primarily in the unfinished BART subway tunnel in San Francisco, it was a longer version of Lucas's student film of the same name that won the



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1967–68 first prize at the National Student Film Festival. *THX* was about a grim future, and it failed at the box office.

“After *THX*, I realized I had to make entertaining films or back off and release through libraries,” Lucas says. “I didn’t want to struggle to get \$3,000. It was too limiting, like giving a painter one brush, a piece of hardboard, and tubes of black and white paint. You can do it, but . . . I didn’t want to be a self-indulgent artist, and I didn’t want my wife to support me forever. I started on the road to make a rock ‘n’ roll cruising movie, determined to master that trade.”

The “rock ‘n’ roll cruising movie” was, of course, *American Graffiti*. Lucas may have intended to dash off an exploitation movie, but instead he created a film that evokes a time long gone and re-creates a lost innocence. “I was amazed when I saw *American Graffiti* and *Star Wars* together for the first time,” Lucas says. “I thought to myself, Well, I have a certain talent at this. The two movies shared a certain nice effervescent giddiness.”

His eyes fixed on the furthest wall, his body melting into his chair like some animal camouflaging itself in a tree, his voice as hesitant and soft as cats’ feet, Lucas gives the impression of fragility. Diabetes, discovered during his army induction physical, kept him out of the Vietnam War. And there is about him at all times a sense of physical limits beyond which he is not willing to go. “Marcia makes him a tuna salad sandwich on white bread with the crust cut off, and he’s under the covers at nine-thirty every night,” says his friend writer-director Philip Kaufman.

Lucas cannot tolerate face-to-face confrontations and almost never shows his anger. He demands neither service nor obeisance, and his employees speak of his humility, but he can be ruthlessly arrogant about his values and priorities. “That he cannot be turned from the vision inside his head nor corrupted by outside influences is the key to his success,” says one of his vice-presidents.

He resigned from the Directors Guild

because the guild fined him for placing Irvin Kershner’s directing credit at the end of *The Empire Strikes Back* (even though Kershner himself did not object). For *Return of the Jedi*, Lucas selected Richard Marquand, a little-known British director who does not belong to the American guild.

“The Hollywood unions have been taken over by the same lawyers and accountants who took over the studios,” Lucas says angrily. “When the Writers Guild was on strike, I couldn’t cross the picket line in my function as a director in order to take care of *American Graffiti* when the studio was chopping it up. I quit the Directors Guild because the union lawyers were locked in a traditional combat with the studio lawyers. The union doesn’t care about its members. It cares about making fancy rules that sound good on paper and are totally impractical. They said Lucasfilm was a personal credit, not a corporate credit. My name is not George Lucasfilm any more than William Fox’s name was Twentieth Century-Fox. On that technicality they sued me for \$250,000. You can pollute half the Great Lakes and not get fined that much. When the DGA threatened to fine Kershner \$25,000, we paid his fine. I consider it extortion. The day after I settled with the Directors Guild, the Writers Guild called up. At least their fine didn’t all go into the business agents’ pockets. Two-thirds went to writers.”

In May 1982, just before the twentieth reunion of Lucas’s Modesto High School graduating class, several of his classmates recalled him as a “nerd.” Lucas remembers himself as a combination of *American Graffiti*’s inept, hapless “Toad” (played by Charlie Martin Smith); passionate drag racer (Paul Le Mat); and tentative, questioning adolescent (Richard Dreyfuss). Only Ron Howard’s serene and secure class president bears no relationship to George Lucas.

Lucas grew up on a walnut ranch, the third child and only son; his father owned a stationery store. “I was as normal as you can get,” he says. “I wanted a car and hated school. I was a poor student. I lived

for summer vacations and got into trouble a lot shooting out windows with my BB gun.”

One day in his seventeenth year, on a country road outside Modesto, he encountered his moment of truth. “I was making a left turn and a guy ran into me. When I was pulled out of the car, they thought I was dead. I wasn’t breathing and I had no heartbeat. I had two broken bones and crushed lungs. The accident coincided with my graduation from high school, a natural turning point. Before the accident, I never used to think. Afterward, I realized I had to plan if I was ever to be happy.”

Is he happy? The answer, like the man, is not uncomplicated. “I took the day off yesterday,” he says. “I saw dailies at 9:00 A.M., had a meeting from 10:00 to 12:00, saw more film, had another meeting. I worked from 9:00 to 6:00 on my day off.”

A year ago, George Lucas said, “People have a perception that money will make everything wonderful. It doesn’t make anything wonderful. You can live in a nicer house and choose what you want for dinner. But if your Mercedes-Benz has a dead battery, it’s even more frustrating than a dead battery in your Chevy. When you’re rich, everything is supposed to work.”

One thing his money could not buy was the birth of a child. Finally, in 1981, after twelve years of marriage, the Lucases adopted a baby. “I was desperate to have a family,” he says—a surprising admission, definitely out of character. “Yet I knew when I had a family I couldn’t devote ninety-eight percent of my time to the company. Since my daughter, the focus has changed. Thirty percent of my time now, and in a year fifty percent, will be focused toward the family.”

Saying he will extricate himself may be easier than doing it. “He is asked five hundred questions a day,” says Sidney Ganis, vice-president of marketing for Lucasfilm. “Should we make the banisters in the ranch house mahogany or



green?" "Should we start this sequence with an over-the-shoulder shot of Harrison Ford getting off the ship?" "Would it be OK to reveal a certain story point in the *Jedi* trailer?" When we were shooting *Jedi* in the desert and the winds blew and we couldn't work, we were depressed. Until George said, 'It's good luck. I always have a day like this on a picture.' Then we weren't depressed any more. When I worked at Warner Bros., Ted Ashley was my boss. But George is my leader."

Marcia Lucas is equally doubtful that he will cut back on work. "Some people are nine-to-fivers," she says. "George is a five-to-niner. He leaves home at five-thirty in the morning and returns at eight-thirty at night."

Nonetheless, George Lucas says, with just a tinge of desperation, "With *Jedi* I have finished what I began nearly ten years ago with *Star Wars*. When *Jedi* is launched, I'll take a couple of years off. The company was created to serve me, but it's turned out the opposite. I serve it. When I was in film school, I had a dream of having my own company of 100 people, to have facilities and talented people available to me so I could make the movies I wanted to make without considering the marketplace. The reality is that I have a company of 313 people depending on me. I've told them, 'I'm not going to make any more hit movies for you. I'm not going to carry this company on my back any more.'

"The original idea was to take the money my films make and put it into outside businesses—businesses like solar energy that don't pollute and aren't morally indefensible—and make money to fund more films. I wanted a financial base. I don't have it yet. Our profit of \$12 million to \$15 million a year is nothing. The big television producers—Tandem, Lorimar, Aaron Spelling—make more in one year than I've made in my whole career. 'The Jeffersons' outgrossed *Star Wars*. Pac-Man outgrossed *Star Wars*. If I really wanted to make money, I'd have been better off in the microchip business. The kid who started Apple has made ten times the money I have." He later adds, "I'm ready to have a different life, to go off and do different things."

Exactly how different that other life will be is a matter of debate. "That he will even consider taking a year off is an immense psychological change in George," says Marcia. "He grew up with the traditional American values of hard work, earning your own way, and more hard work. It doesn't do him any good to have the money to indulge himself if he never indulges

himself."

His present project, now nearly half completed and projected to cost a total of \$10 million, is a working retreat for filmmakers, a creative environment that he has offered to share with such writers and directors as Hal Barwood, Matthew Robbins, John Korty, Michael Ritchie, and Philip Kaufman. "A lot of rock groups build backyard recording studios because they like to work at home. I'm building a backyard film studio," he teases.

On the three-thousand-acre Skywalker Ranch, he has the luxury of building a world in which he finds it satisfying to live—an odd mixture of the nineteenth and twenty-first centuries. In an extraordinary coincidence, Skywalker Ranch is located in a valley north of San Francisco that was named Lucas Valley long before George Lucas was born. Driving down the winding valley road two years ago on a day so hot that the steering wheel was painful to touch, Lucas looked out at the yellow hills. "We have two seasons here—the green season and the yellow season," he said. "From the valley floor, we own everything in sight. Over ninety percent of the land will be kept in its natural state. It's a totally controlled environment, and it's designed so that no building will be visible from any other building. Four to six years from now, we'll have all the amenities for filmmakers—editing rooms, mixing rooms, automated dialogue recording, a film research library, and a place simply to sit and think."

Now the buildings are rising. Through a redwood forest, over a newly built wood bridge, is a Victorian village—octagonal buildings with casement windows and glowing stained-glass grapevines, tongue-and-groove oak paneling that can rarely be found in homes less than eighty years old,

gables, cupolas, immense flagstone fireplaces, leaded glass doors—all of the quaint, eccentric buildings painted ice-cream white and blueberry gray. Inside, Victorian England seems to have been crossed with a lodge in the Adirondacks, and the huge, two-story rooms smell of fresh Douglas fir. Everything from the stained-glass field mice to the brass chandeliers has been designed and made in a Lucasfilm shop.

Below the lazy nineteenth-century land-



Photo courtesy George Lucas

A young George Lucas at work on *Filmmaker*, his documentary about Francis Ford Coppola's Rain People.

scape, in the basements of the quaint buildings, lie the conduits and wires, the circuits and computers of the twenty-first century. Those cellar computers will run the washing machines and irrigation system, sweep the three thousand acres with closed-circuit television, and control the electronically operated gates that keep out the curious.

If there is a touch of paranoia in his walled paradise, Lucas insists it is justified. "There are a lot of crazy people walking in the streets," he says. "Some guy came into our Los Angeles office claiming to be a



Jedi Knight and pulled a knife on a secretary. Another real lunatic insisted he wrote *Star Wars* and came to pick up his \$100 million check." Although Lucas's wife was ready to adopt a child several years ago, he hesitated because of his vulnerability as a person with "a well-known name."

**G**eorge Lucas perceives film as a moral instrument. "Film and [other] visual entertainment are a pervasively important part of our culture, an extremely significant influence on the way our society operates," he says. "People in the film industry don't want to accept the responsibility that they had a hand in the way the world is loused up. But, for better or worse, the influence of the church, which used to be all-powerful, has been usurped by film. Films and television tell us the way we conduct our lives, what is right and wrong. When Burt Reynolds is drunk on beer in *Hooper* and racing cops in his rocket car, that reinforces the recklessness of the kids who've been drawn to the movie in the first place and are probably sitting in the theater drinking beer."

"*Star Wars*," he goes on, "came out of my desire to make a modern fairy tale. In college I became fascinated by how culture is transmitted through fairy tales and myths. Fairy tales are how people learn about good and evil, about how to conduct themselves in society. Darth Vader is the bad father; Ben Kenobi is the good father. The good and bad mothers are still to come. I was influenced by the dragon-slayer genre of fairy tale—the damsel in distress, the evil brothers, the young knight who through his virtue slays the dragon."

There will be another trilogy, of course, which takes place before the current one. It deals with the young Darth Vader and the young Ben Kenobi. The good and bad mothers will play their part, as will the robots—R2D2 and C-3PO—the only "actors" who will bridge the trilogies. At the end of the first trilogy, Luke Skywalker will be four years old.

How does Lucas see the future of motion pictures? "The technology of making movies," he says, "is getting more accessible. With a small, dedicated crew, you can make a movie with a very small outlay of capital. You can make a professional-looking film for quite a bit less than a million dollars. I think it's only a matter of time before one of the thousands of film school-trained guys goes back to Kansas City and makes a *Rocky* or an *American Graffiti*. The distribution system will be located in Los Angeles for quite a while before it

breaks up. But even that will break up eventually as cable TV and cassettes and other markets open up. You can sell to cable TV by making five phone calls out of your house.

"I've been saying for a long time that Hollywood is dead. That doesn't mean the film industry is dead. But for one region to dominate is dead, although it will take ten or fifteen years to have that visible. The filmmaker hasn't figured out that he doesn't need the agents and the studio executives. What is Hollywood? An antiquated, out-of-date distribution apparatus, a monopoly, a system designed to exploit the filmmaker. The system is collapsing because of new technologies. The movie companies are structured inefficiently. In good times, it doesn't show. But they won't be able to survive the bad times."

Lucas has made a point of using film crews from the San Francisco area even when they are not as skilled as Hollywood craftsmen. "I'd rather take the knocks of not quite as good a movie in order to train people," he says. "That way, eventually crews up here will be as good as crews in Hollywood."

He hopes that the films that come out of different regions of the United States "will be as different from each other as films from different areas of Europe. When filmmaking is diversified across the country, every filmmaker won't be locked into thinking the same stale ideas. When you get film industries in Georgia, Texas, and Chicago, they'll stop copying Hollywood product."

During his "year off," from the summer of 1983 to the summer of 1984, Lucas will have to make a major decision. Will he move Lucasfilm to the next logical plateau? Will he enlarge it into a movie production company that produces five or six films a year created by other filmmakers? "Do I hire somebody whose taste is compatible with mine and try to become a Ladd Company?" he asks.

He has no answer yet. He sits inside one of the concrete-block warehouses that currently form his empire. On a shelf a few rooms away sit *Millennium Falcons* in all sizes down to one as small as a half-dollar. He has conquered outer space, and the stamp of *Star Wars* has shaped the decisions at every major studio for the last six years. It would be the ultimate irony if George Lucas, who argues fiercely for Hollywood's obsolescence, should be the mogul to replace it.

Aljean Harmetz covers the entertainment industry on the West Coast for the *New York Times*.

## Jedi's Extra Special Effects

Adam Eisenberg

**W**orking on effects pictures can be both very satisfying and extremely frustrating at the same time," says Ken Ralston, cosupervisor of the visual treats for *Return of the Jedi*. "It's so difficult to get any feeling for the whole movie or to let yourself enjoy it because you're always concerned about all the details needed for the shots. You just don't experience any immediate satisfaction. To produce the dreams, you have to go through the nightmares."

Ralston is one of the many artists and technicians at Industrial Light and Magic (ILM), the arm of Lucasfilm Ltd. chiefly responsible for creating worlds of long ago and galaxies far, far away. On a particularly rainy day in February, he and the others are caught up in the last few feverish months of work on *Jedi*.

"The biggest challenge of any *Star Wars* film is to make it better than the previous one," notes effects art director Joe Johnston. "That was the problem we faced on *The Empire Strikes Back*. We had to come up with so many new and different things to make it better than the first film because that was no longer unique. *Jedi* we've had to make even more exciting than *Empire*, which I think we've done. It's like both the first two films combined, and then some."

Three cosupervisors—Ralston, Richard Edlund, and Dennis Muren—were needed to handle *Jedi*'s 517 different special effects shots (*Star Wars*, by comparison, had 365 shots, while *Empire* had 415), resulting in one of the most technically complex films ever mounted. They have attempted to create a picture of tremendous scope, of huge galactic settings and immense battles. If there were maybe twenty or thirty spaceships fighting it out over the Death Star in the original film, now there are hundreds.

*Return of the Jedi* follows Luke Skywalker, Princess Leia, Lando Calrissian, R2D2, C-3PO, and Chewbacca as they race to the desert world of Tatooine, Luke's home planet, last seen in *Star Wars*. There they hope to release Han Solo from his carbon ice cube and mount a new attack on the Empire. A recognizable setting like a desert might sound like an



easy effects arena, but, as Richard Edlund explains, "desert sequences are always difficult because they're set in brightly lit sunshine and the location is one people have either actually visited or seen in *National Geographic*. It's so much harder to create convincing special effects when every slight flaw will be picked up by your average ten-year-old viewer. You can explain all day long the problems you had doing the shots and it won't matter, because all he or she's doing is going to the movies, and if you let them down, you've failed to do your job."

The Tatooine sequences involved diverse challenges, including flying sand skiffs, an enormous floating barge, and a spacious palace, the setting for a risqué party featuring hundreds of otherworldly beasts. All of the live action was shot either on sound stages in England or at a sand-duned location outside Yuma, Arizona. Scenes involving the skiffs and the barge (which ultimately explodes in a wild

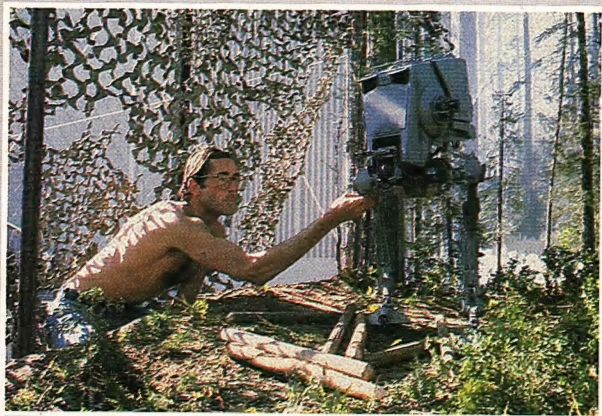
fury of flames) were executed using miniatures; the palace, the humble abode of one Jabba the Hutt, was a carefully designed painting by matte-department supervisor Mike Pangrazio.

Some of *Jedi's* most colorful characters make their screen debuts in this richly bizarre edifice. To help design and create the sixty-odd dinner guests required, the ILM monster shop became involved, under the direction of Phil Tippett. "We did a lot of dreaming and closing our eyes, trying to imagine the most ridiculous creatures we could," Tippett notes. "We wanted to avoid taking the head of an eagle and sticking it onto the tail end of a lion, like you'd see in some sixteenth-century representations of monsters."

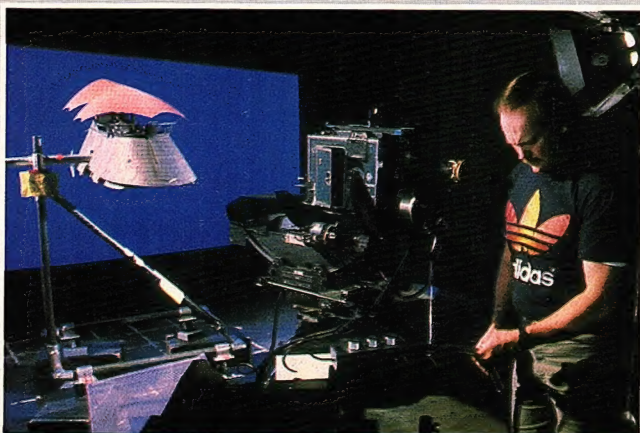
The result may be the most motley array of creatures ever conceived—including Gamorrean Pig Guards and a sexy singer with lips at the end of her snout and long spindly legs. Some of the monsters were mechanically controlled by cables

and wires; others were elaborate hand puppets, like the Rancor Pit Monster, a creature that Tippett fondly describes as a lethargic cross between a bear and a potato. Although the Rancor may look imposingly large on the screen as it moves around the dark, dank confines of the pit, it was actually an eighteen-inch puppet operated by Tippett's black-gloved hand and by wires in the ceiling of the set. Sarlacc, the gigantic sand anemone that lives in the Great Pit of Carkoon, was actually a fifteen-foot-wide, foam-rubber, mouthlike beast with wire-operated tentacles. To make the creature appear lively, to give it a natural pulsation, Tippett and his crew used broom handle-like poles offcamera.

*Jedi's* climactic last reel features an immense space battle as the Rebels make one last-ditch effort to destroy the Imperial Fleet and a partially completed Death Star. As Ken Ralston



Clockwise from above: Visual effects cosupervisor Dennis Muren prepares an Imperial Walker for its close-up; Luke and Leia poise for their swing to safety from the deck of Jabba the Hutt's Sail Barge; and effects cameraman Don Dow sets up the Vista Rama motion-control camera to shoot the barge against a blue screen.





explains, "All the effects—ships, explosions, and laser blasts—have to be choreographed together even though they are all shot separately, one at a time."

After all the individual ingredients, or "elements," of the shot have been filmed, they are sent to the optical printing department, where they are color-balanced, aligned, and composited onto one strip of film. Careful checks must be made to ensure that laser beams correspond to the right ships and explosions occur in the correct part of the frame. On *Empire*, the most complex shot involved twenty-three elements; on *Jedi*, one has more than sixty elements and took four weeks to composite. This shot, the most intricate ILM has ever produced, will appear on the screen for perhaps two seconds.

Models play an important part in any film that is set in another galaxy, and for *Return of the Jedi*, 150 such carefully constructed miniatures were used. The *Millennium Falcon* alone was represented

by five different variations, the largest a fifteen-foot section and the smallest a complete craft one and a half inches across. Darth Vader's destroyer, a large blue surfboard in space, required only one model, but it was ten feet long. Since the ship is supposed to be five miles in length, the miniature's outer shell was etched out of brass and covered with more than two hundred thousand pinpoints of light to help create the needed sense of scale.

After the battle begins, the *Falcon* and several Rebel fighters lead a chase down through the arteries of the Death Star, the final card in the Empire's losing hand, and the subject of many elaborate studio models. Zipping in and out of the pipe-lined arteries, the Rebels finally reach the reactor core, a huge Grand Canyon-like cavern and the heart of the destructive monolith. To facilitate such illusions, the ILM model shop constructed many large sections of tunnel, some as long as seventy-two feet and as wide as four or five feet.

The core model itself was twenty-four feet across. During production, more than a football field's length of tunnels were built.

In one critical sequence during the rapid-speed tunnel chase, the *Falcon* finds itself pursued by a growing ball of fire that's careening down the channel. For this effect, the model shop constructed another tunnel with a camera track built into its ceiling. Mortars were then placed every foot or so along the track to create flaming charges. The camera was launched by compressed air; it shot down the enclosed trench, tripping switches that triggered a total of eighty mortars, one after another, and capturing the illusion of a fireball barreling down the tunnel. Later, a model of the *Falcon* was matted over this footage using the blue-screen process, completing the effect of its being menaced by the burning ball from hell.

At \$32.5 million, *Return of the Jedi* is Lucasfilm's most ambitious film project,



Tony Lawson, left, sculpts a miniature Gamorrean Pig Guard; below left, a full-grown Pig Guard rushes to disarm Luke. Keyboardist Max Rebo, right, gets painted blue for his gig, below right, in Jabba's throne room.



Patty Blau



Frank Connor



Frank Connor



and ILM's greatest challenge. From design to finish, more than two years have been spent, utilizing over 140 people in fourteen departments. But, in the end, just how special can the special effects be?

George Lucas once said that on a scale of 1 to 10, he'd rate the effects for *Star Wars* at 3.5. When asked about this after *The Empire Strikes Back* was released, Richard Edlund gave the sequel a 6.5. Now, on *Jedi*, Edlund notes, "I think its effects are better than those in both of the earlier films, but I'm not going to say they represent a perfect 10, because then I might as well retire next year."

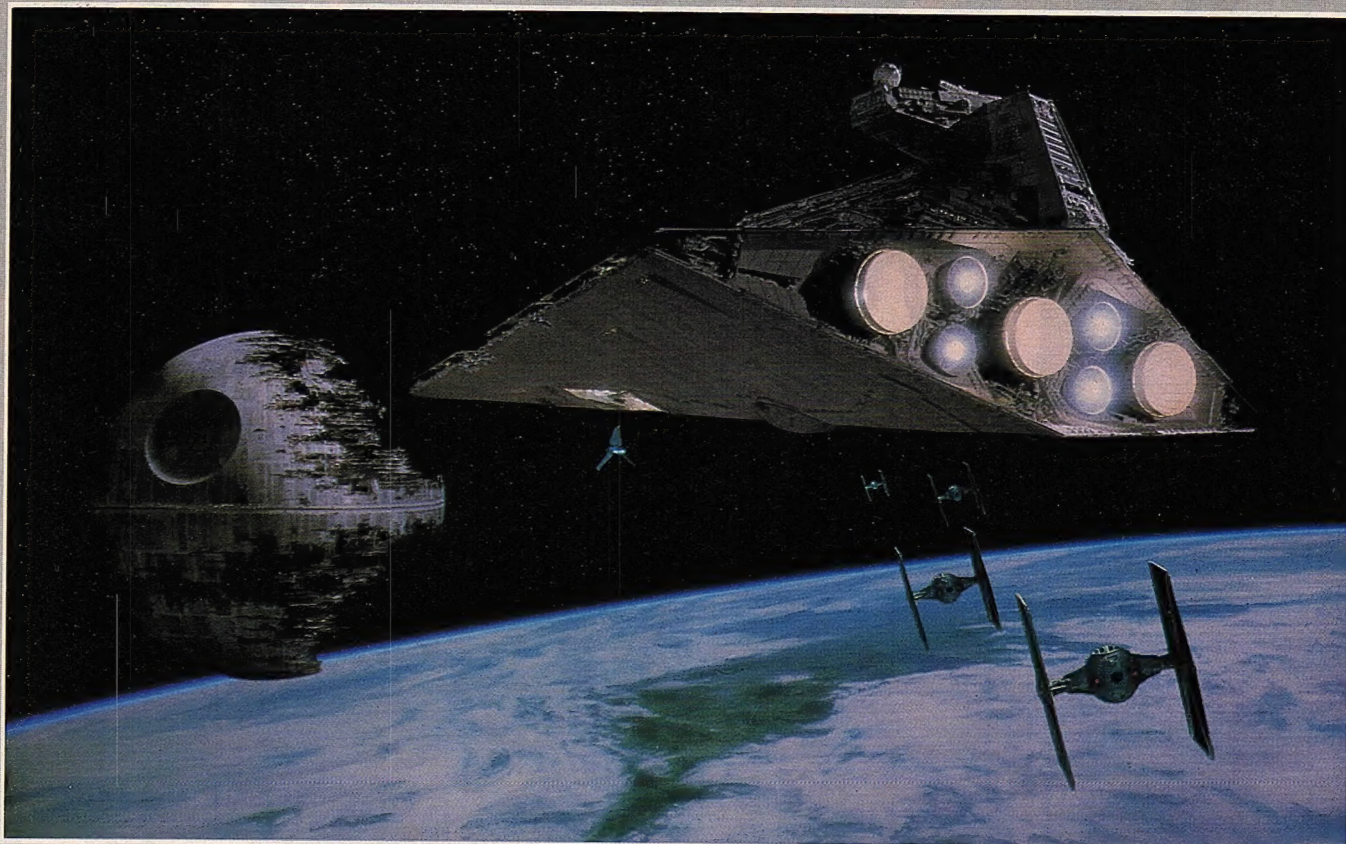
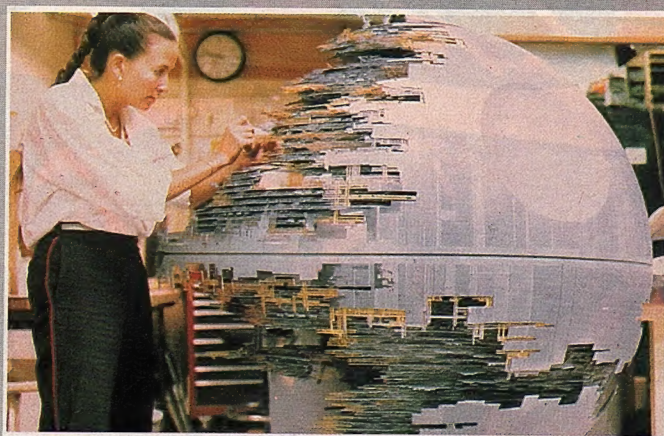
Steve Gawley, the model-shop supervisor, adds, "We've tried to do our best work, and I don't think audiences will be disappointed. *Return of the Jedi* will be the exclamation point after the initials ILM—it's all the tricks in our bag." ■

Adam Eisenberg writes on film from Los Angeles.

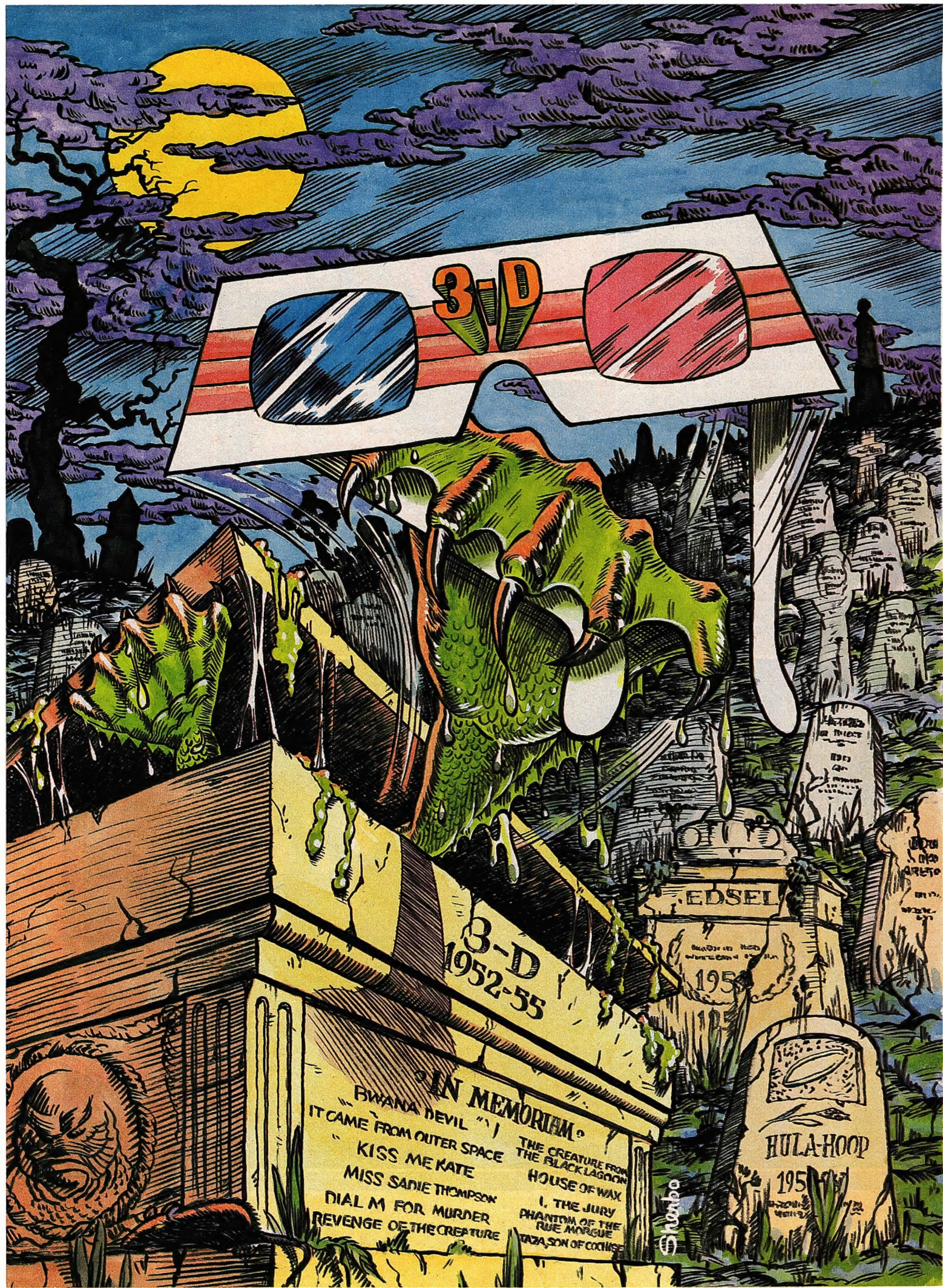
Model maker Randy Ottenberg, right, works on the Death Star model. Below, the fruit of her labor: a Star Destroyer discharges an Imperial shuttle toward the new, unfinished Death Star as four TIE fighters patrol the sky over the Moon of Endor.



Left, matte-department supervisor Mike Pangrazio works on a preliminary painting of Jabba's palace.







3-D

3-D  
1952-55

IN MEMORIAM  
"PIWANA DEVIL"  
IT CAME FROM OUTER SPACE  
KISS ME KATE  
MISS SADIE THOMPSON  
DIAL M FOR MURDER  
REVENGE OF THE CREATURE  
THE CREATURE FROM THE BLACK LAGOON  
HOUSE OF WAX  
I, THE JURY  
PHANTOM OF THE RUE MORGUE  
TAZA SON OF COCHISE

EDSEL

195

HULA-HOOP

195

Shorbo